

OPTICALLY FUNCTIONAL GLASS

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Abstract of JP9048634

PROBLEM TO BE SOLVED: To obtain an optically functional glass which facilitates the preparation of large-sized devices with excellent processability by combining a specific metal oxide and another specific metal oxide. **SOLUTION:** This optically functional glass is composed of a combination of 1) one or more selected from Nb₂O₅, Ta₂O₅, PbO, Bi₂O₃, and one or more selected from SiO₂, B₂O₃, GeO₂; (2) B₂O₃ and TeO₂, 3) at least one selected from ZnO and SnO and at least one selected from TeO₂ and P₂O₅ and has the photoinduced effect on refractive index, the electro-optic effect and/or SHG (second harmonic generation) effect. For example, this glass contains 2-60 mole% of Nb₂O₅ and/or Ta₂O₅, 40-98mol% of one or more selected from SiO₂, B₂O₃ and GeO₂. In this glass, addition of at least one of Li₂O, Na₂O, K₂O, Rb₂O and Cs₂O is also effective. Or the following compositions are also effective: 15-30mol% of B₂O₃ and 70-85mol% of TeO₂ or 10-40mol% of ZnO, 60-70mol% of TeO₂ and ≤20mol% of at least one of MgO and CdO.

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OPTICALLY FUNCTIONAL GLASS

[Claims]

[Claim 1] An optically functional glass comprising at least one selected from Nb_2O_5 , Ta_2O_5 , PbO and Bi_2O_3 , and at least one glass network former selected from SiO_2 , B_2O_3 and GeO_2 , wherein the glass has a photo-induced effect on refractive index, an electro-optic effect and/or a second harmonic generation effect.

[Claim 2] The optically functional glass according to claim 1,
wherein the glass contains 2-60 mol% of at least one selected from Nb_2O_5 and Ta_2O_5 , and 40-98 mol% of at least one selected from SiO_2 , B_2O_3 and GeO_2 .

[Claim 3] The optically functional glass according to claim 2,
wherein the glass contains 2-30 mol% of at least one selected from Nb_2O_5 and Ta_2O_5 , 45-80 mol% of at least one selected from SiO_2 , B_2O_3 and GeO_2 , and 5-25 mol% of at least one selected from Li_2O , Na_2O , K_2O , Rb_2O and Cs_2O .

[Claim 6] An optically functional glass comprising at least one selected from ZnO and SnO , and at least one glass network former selected from TeO_2 and P_2O_5 , wherein the glass has a photo-induced effect on refractive index, an electro-optic effect and/or a second harmonic generation effect.

[Claim 7] The optically functional glass according to claim 6,
wherein the glass contains 10-40 mol% of ZnO and 60-75 mol% of TeO_2 , and 20 mol% or less of at least one selected from MgO and CdO .